

REMARKS

In response to the Office Action dated December 18, 2003, Applicant respectfully requests reconsideration.

Claims 1-17 stand rejected under the judicially created doctrine of double patenting. Claims 1-17 have been canceled without prejudice rendering the rejection of claims 1-17 moot.

Claims 18-19 and 21 stand rejected under 35 USC 102(b) as anticipated by U.S. Patent No. 5,173,819 (Takahashi). Applicants respectfully asserts that these claims are patentable in view of Takahashi.

Independent claim 18 recites a method of cooling equipment modules disposed in a rack of equipment modules. The method comprises drawing gas from a bottom region near a bottom of the rack, guiding the gas to a lower front region disposed below the fronts of the modules, and pushing the gas upward from the lower front region into an upper front region adjacent fronts of the modules while inhibiting the gas from initially flowing into portions of the rack other than the upper front region.

Conversely, Takahashi does not teach, disclose, or suggest the method recited in independent claim 18. In particular, Takahashi does not teach, disclose, or suggest pushing the gas upward into an upper front region adjacent fronts of modules in a rack while inhibiting the gas from initially flowing into portions of the rack other than the upper front region. Takahashi describes and shows that fans 351-354 suck air through air inlets 8 in a skirt 7 of a magnetic disk apparatus. FIG. 8 and column 8, lines 41-44. Air is sucked to fronts of head-disk units (HDUs) 12 in a first flow X and also separated into a second flow Y and suck up through printed circuit board (PCB) containing chambers of the HDUs 12. FIG. 9 and column 8 line 62 – column 9, line 9. Thus, in Takahashi, air is sucked through HDUs, not pushed, and the air is sucked both to the fronts of the HDUs and up through bottoms of the HDUs in a relatively even split while claim 18 recites that gas is pushed to an upper front region adjacent fronts of module while inhibiting the gas from initially flowing into portions of the rack other than the upper front region. Takahashi does not push the air and does not inhibit the air from initially flowing into portions of the apparatus other than adjacent fronts of the HDUs. For at least these reasons, independent claim 18 is patentable over Takahashi.

Dependent claims 19-21 are also patentable over Takahashi. Claims 19-21 depend directly from independent claim 18 and are therefore patentable for at least the reasons that claim

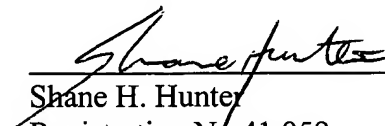
18 is patentable over Takahashi. Further, claim 19 recites that inhibiting gas from initially flowing into portions of the rack other than a front region adjacent fronts of modules in the rack comprises containing the gas upstream from the front region. Takahashi does not teach, disclose, or suggest such containing, indeed, discussing allowing air to flow upward in Takahashi's apparatus upstream of a front region adjacent fronts of Takahashi's HDUs.

Claim 20 stands rejected under 35 USC 103(a) over Takahashi in view of Japanese reference JP405332568A (Nishikawa). Nishikawa does not make up for the deficiencies noted above with respect to Takahashi and the Examiner does not assert that it does. The Examiner cites Nishikawa only for use of a plenum/duct 14. Thus, claim 20 is patentable over Takahashi in view of Nishikawa.

Applicants have added new claims 22-25. Independent claim 22 recites a method of cooling equipment modules disposed in a rack of equipment modules, the method comprising inducing gas from a bottom region near a bottom of the rack to flow into a housing disposed in the rack, guiding the gas from the bottom region vertically through an intake port of the housing and horizontally through the housing to a lower front region disposed below the fronts of the modules, and urging the gas upward from the lower front region through an output port of the housing into an upper front region adjacent the fronts of the modules while inhibiting the gas from initially flowing into portions of the rack other than the upper front region. Claim 22 is patentable over Takahashi at least because Takahashi fails to teach, disclose, or suggest at least the guiding recited in claim 22. Claims 23-24 depend directly from claim 22 and are thus patentable over Takahashi for at least the same reason. Applicants respectfully assert that new claims 22-24 are in allowable condition. No new matter is introduced by these claims.

Based on the foregoing, this application is believed to be in allowable condition, and a notice to that effect is respectfully requested. The Examiner is invited to call the Applicant's Attorney at the number provided below with any questions.

Respectfully submitted,


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